Claims:

1. A pharmaceutical composition for topical administration, comprising a phthalocyanine photosensitizer or a pharmaceutically acceptable salt thereof, and a pharmaceutically acceptable carrier.

2. A pharmaceutical composition of claim 1, wherein the phthalocyanine has a structure of formula (I) or a pharmaceutically acceptable salt thereof

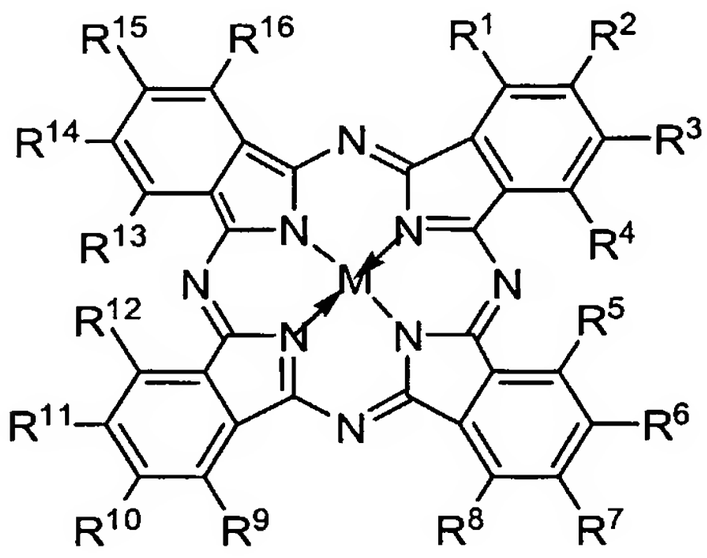
[Pc·M]

(I)

wherein Pc is a substituted or unsubstituted phthalocyanine; and

M is a diamagnetic metal ion, optionally complexed with or covalently bound to one or two axial ligands, wherein the metal ion is coordinated to the phthalocyanine moiety.

3. A pharmaceutical composition of claim 1, wherein the phthalocyanine has a structure of formula (II) or a pharmaceutically acceptable salt thereof



(II)

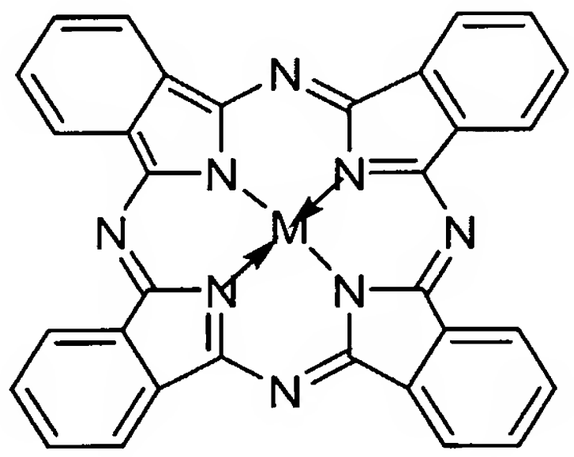
wherein M is a diamagnetic metal ion optionally complexed with or covalently bound to one or two axial ligands, wherein the metal ion is coordinated to the phthalocyanine moiety; and

$R^1 - R^{16}$ are each independently selected from hydrogen, halogen, nitro, cyano, hydroxy, thiol, amino, carboxy, aryl, heteroaryl, carbocyclyl, heterocyclyl, C_{1-20}alkyl, C_{1-20}alkenyl, C_{1-20}alkynyl, C_{1-20}alkoxy, C_{1-20}acyl, C_{1-20}alkylcarbonyloxy, C_{1-20}aralkyl, C_{1-20}hetaralkyl, C_{1-20}carbocyclylalkyl, C_{1-20}heterocyclylalkyl, C_{1-20}aminoalkyl, C_{1-20}alkylamino, C_{1-20}thioalkyl, C_{1-20}alkylthio, C_{1-20}hydroxyalkyl, C_{1-20}alkyloxycarbonyl, C_{1-20}alkylaminocarbonyl, C_{1-20}alkylcarbonylamino, C_{1-10}alkyl-Z-C_{1-10}alkyl;

R^{17} is selected from hydrogen, C_{1-20}acyl, C_{1-20}alkyl, and C_{1-20}aralkyl; and

Z is selected from S, NR^{17}, and O.

4. A pharmaceutical composition of claim 1, wherein the phthalocyanine has a structure of Formula (III) or a pharmaceutically acceptable salt thereof



(III)

wherein M is $(G)_aY[(OSi(CH_3)_2(CH_2)_bN_c(R')_d(R'')_e)_fX_g]_p$;

Y is selected from Si, Al, Ga, Ge, or Sn;

R' is selected from H, CH_3, C_2H_5, C_4H_9, C_4H_8NH, C_4H_8N, $C_4H_8NCH_3$, C_4H_8S, C_4H_8O, C_4H_8Se, $OC(O)CH_3$, OC(O), CS, CO, CSe, OH, $C_4H_8N(CH_2)_3CH_3$, $(CH_2)_2N(CH_3)_2$, $(CH_2)_nN((CH_2)_o(CH_3))_2$, and an alkyl group having from 1 to 12 carbon atoms;

R" is selected from H, SO_2CH_3, $(CH_2)_2N(CH_3)_2$, $(CH_2)_{11}CH_3$, $C(S)NHC_6H_{11}O_5$, $(CH_2)_nN((CH_2)_o(CH_3))_2$, and an alkyl group having from 1 to 12 carbon atoms;

G is selected from OH and CH_3;

X is selected from I, F, Cl, or Br;

a is 0 or 1;

b is an integer from 2 to 12;

c is 0 or 1;

d is an integer from 0 to 3;

e is an integer from 0 to 2;

f is 1 or 2;

g is 0 or 1;

n is an integer from 1 to 12;

o is an integer from 1 to 11; and

p is 1 or 2.

5. A pharmaceutical composition of claim 4, wherein M is selected from $AlOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $AlOSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-$; $CH_3SiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-]_2$; $Si[OSi(CH_3)_2(CH_2)_4NH_2]_2$; $Si[OSi(CH_3)_2(CH_2)_4NHSO_2CH_3]_2$; $HOSiOSi(CH_3)_2(CH_2)_4NHSO_2CH_3$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_2CH_3)(CH_2)_2N(CH_3)_2$; $Si[OSi(CH_3)_2(CH_2)_4NHCSNHC_6H_{11}O_5]_2$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3OCOCH_3$; $HOSiOSi(CH_3)_2(CH_2)_3OH$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_2CH_3)(CH_2)_2N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8O$; $AlOSi(CH_3)_2(CH_2)_3N^+(CH_3)_2(CH_2)_{11}CH_3I^-$; $HOSiOSi(CH_3)_2(CH_2)_8N(CH_3)_2$; $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8O]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8S$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_2)_3(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3NCS$; $HOSiOSi(CH_3)_2(CH_2)_3N[(CH_2)_3N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8NCH_3$; $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8NCH_3]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8N(CH_2)_3CH_3$; and $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8NH]_2$.

6. A pharmaceutical composition of claim 5, wherein M is $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$.

7. A pharmaceutical composition of claim 1, wherein the phthalocyanine has a structure of Formula (IV) or a pharmaceutically acceptable salt thereof

$$SiPc[(OR^1)(OR^2)]$$

(IV)

wherein R^1 is selected from H and R2;

each R^2 is independently $Si(R^3)_2(C_{1\text{-}12}alkyl\text{-}N(C_{1\text{-}12}alkyl)_2)$;

each R^3 is independently selected from $C_{1\text{-}12}$alkyl, $C_{1\text{-}12}$alkoxy, $C_{1\text{-}12}$aralkyl, aryloxy, and aryl.

8. A pharmaceutical composition of any one of claims 1-7, wherein the phthalocyanine is formulated as a salt selected from hydrobromide, hydrochloride, sulfate, bisulfate, phosphate, nitrate, acetate, pyruvate, valerate, oleate, palmitate, stearate, laurate, benzoate, lactate, phosphate, tosylate, citrate, maleate, fumarate, succinate, tartrate, naphthylate, mesylate, glucoheptonate, lactobionate, and laurylsulphonate salts.

9. A pharmaceutical composition of claim 8, wherein the phthalocyanine is formulated as a salt selected from hydrochloride and pyruvate.

10. A pharmaceutical composition of claim 9, wherein the phthalocyanine is formulated as a hydrochloride salt.

11. A pharmaceutical composition of claim 10, wherein the phthalocyanine is formulated as a pyruvate salt.

12. A method for treating epithelial cancer, comprising

(i) topically administering a photosensitizer to an epithelial surface; and

(ii) irradiating the epithelial surface.

13. A method of claim 12, further comprising a pharmaceutically acceptable carrier.

14. A method of claim 13, wherein the photosensitizer is a phthalocyanine or a pharmaceutically acceptable salt thereof.

15. A method of claim 14, wherein the phthalocyanine has a structure of formula (I) or a pharmaceutically acceptable salt thereof

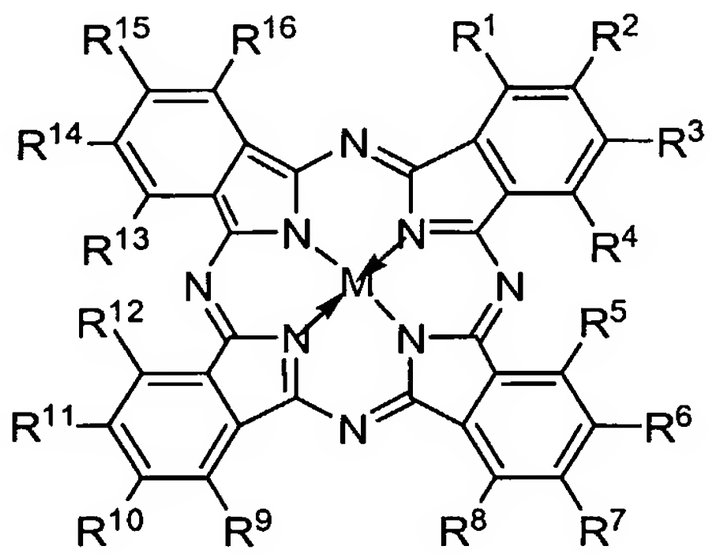
[Pc·M]

(I)

wherein Pc is a substituted or unsubstituted phthalocyanine; and

M is a diamagnetic metal ion, optionally complexed with or covalently bound to one or two axial ligands, wherein the metal ion is coordinated to the phthalocyanine moiety.

16. A pharmaceutical composition of claim 14, wherein the phthalocyanine has a structure of formula (II) or a pharmaceutically acceptable salt thereof



(II)

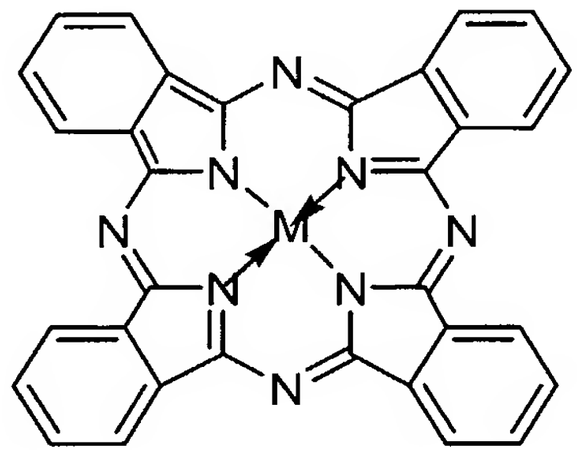
wherein M is a diamagnetic metal ion optionally complexed with or covalently bound to one or two axial ligands, wherein the metal ion is coordinated to the phthalocyanine moiety; and

$R^1 - R^{16}$ are each independently selected from hydrogen, halogen, nitro, cyano, hydroxy, thiol, amino, carboxy, aryl, heteroaryl, carbocyclyl, heterocyclyl, C_{1-20}alkyl, C_{1-20}alkenyl, C_{1-20}alkynyl, C_{1-20}alkoxy, C_{1-20}acyl, C_{1-20}alkylcarbonyloxy, C_{1-20}aralkyl, C_{1-20}hetaralkyl, C_{1-20}carbocyclylalkyl, C_{1-20}heterocyclylalkyl, C_{1-20}aminoalkyl, C_{1-20}alkylamino, C_{1-20}thioalkyl, C_{1-20}alkylthio, C_{1-20}hydroxyalkyl, C_{1-20}alkyloxycarbonyl, C_{1-20}alkylaminocarbonyl, C_{1-20}alkylcarbonylamino, C_{1-10}alkyl-Z-C_{1-10}alkyl;

R^{17} is selected from hydrogen, C_{1-20}acyl, C_{1-20}alkyl, and C_{1-20}aralkyl; and

Z is selected from S, NR^{17}, and O.

17. A method of claim 14, wherein the phthalocyanine has a structure of Formula (III) or a pharmaceutically acceptable salt thereof



(III)

wherein M is $(G)_aY[(OSi(CH_3)_2(CH_2)_bN_c(R')_d(R'')_e)_fX_g]_p$;

Y is selected from Si, Al, Ga, Ge, or Sn;

R' is selected from H, CH_3, C_2H_5, C_4H_9, C_4H_8NH, C_4H_8N, $C_4H_8NCH_3$, C_4H_8S, C_4H_8O, C_4H_8Se, $OC(O)CH_3$, OC(O), CS, CO, CSe, OH, $C_4H_8N(CH_2)_3CH_3$, $(CH_2)_2N(CH_3)_2$, $(CH_2)_nN((CH_2)_o(CH_3))_2$, and an alkyl group having from 1 to 12 carbon atoms;;

R" is selected from H, SO_2CH_3, $(CH_2)_2N(CH_3)_2$, $(CH_2)_{11}CH_3$, $C(S)NHC_6H_{11}O_5$, $(CH_2)_nN((CH_2)_o(CH_3))_2$, and an alkyl group having from 1 to 12 carbon atoms;

G is selected from OH and CH_3;

X is selected from I, F, Cl, or Br;

a is 0 or 1;

b is an integer from 2 to 12;

c is 0 or 1;

d is an integer from 0 to 3;

e is an integer from 0 to 2;

f is 1 or 2;

g is 0 or 1;

n is an integer from 1 to 12;

o is an integer from 1 to 11; and

p is 1 or 2.

18. A method of claim 17, wherein M is selected from $AlOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $AlOSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-$; $CH_3SiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-]_2$; $Si[OSi(CH_3)_2(CH_2)_4NH_2]_2$; $Si[OSi(CH_3)_2(CH_2)_4NHSO_2CH_3]_2$; $HOSiOSi(CH_3)_2(CH_2)_4NHSO_2CH_3$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_2CH_3)(CH_2)_2N(CH_3)_2$; $Si[OSi(CH_3)_2(CH_2)_4NHCSNHC_6H_{11}O_5]_2$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3OCOCH_3$; $HOSiOSi(CH_3)_2(CH_2)_3OH$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_2CH_3)(CH_2)_2N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8O$; $AlOSi(CH_3)_2(CH_2)_3N^+(CH_3)_2(CH_2)_{11}CH_3I^-$; $HOSiOSi(CH_3)_2(CH_2)_8N(CH_3)_2$; $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8O]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8S$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_2)_3(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3NCS$;

$HOSiOSi(CH_3)_2(CH_2)_3N[(CH_2)_3N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8NCH_3$; $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8NCH_3]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8N(CH_2)_3CH_3$; and $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8NH]_2$.

19. A method of claim 18, wherein M is $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$.

20. A method of claim 14, wherein the phthalocyanine has a structure of Formula (IV) or a pharmaceutically acceptable salt thereof

$$SiPc[(OR^1)(OR^2)]$$

(IV)

wherein R^1 is selected from H and R^2;

each R^2 is independently $Si(R^3)_2(C_{1\text{-}12}alkyl\text{-}N(C_{1\text{-}12}alkyl)_2)$;

each R^3 is independently selected from $C_{1\text{-}12}$alkyl, $C_{1\text{-}12}$alkoxy, $C_{1\text{-}12}$aralkyl, aryloxy, and aryl.

21. A method of claim 12, wherein the phthalocyanine is formulated as a salt selected from hydrobromide, hydrochloride, sulfate, bisulfate, phosphate, nitrate, acetate, pyruvate, valerate, oleate, palmitate, stearate, laurate, benzoate, lactate, phosphate, tosylate, citrate, maleate, fumarate, succinate, tartrate, naphthylate, mesylate, glucoheptonate, lactobionate, and laurylsulphonate salts.

22. A method of any one of claims 15-20, wherein the phthalocyanine is formulated as a salt selected from hydrochloride and pyruvate.

23. A pharmaceutical composition of claim 22, wherein the phthalocyanine is formulated as a hydrochloride salt.

24. A method of claim 22, wherein the phthalocyanine is formulated as a pyruvate salt.

25. A pharmaceutically acceptable salt of a compound having a structure of formula (I) or a pharmaceutically acceptable salt thereof

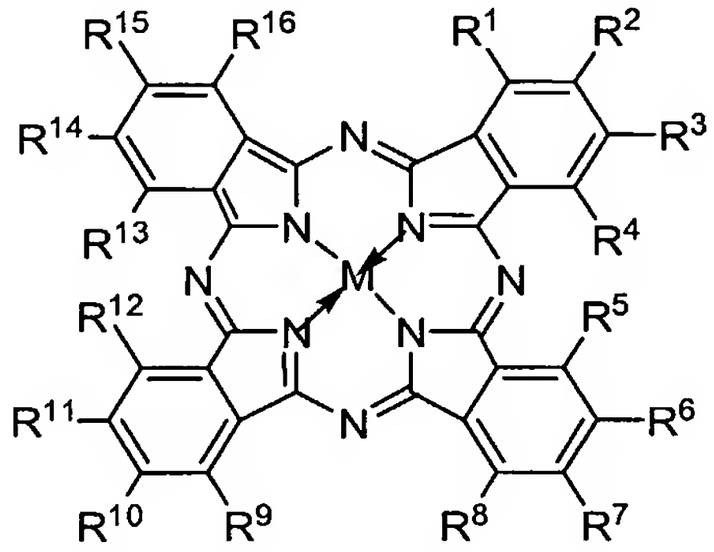
[Pc·M]

(I)

wherein Pc is a substituted or unsubstituted phthalocyanine; and

M is a diamagnetic metal ion, optionally complexed with or covalently bound to one or two axial ligands, wherein the metal ion is coordinated to the phthalocyanine moiety.

26. A pharmaceutically acceptable salt of a compound having a structure of formula (II) or a pharmaceutically acceptable salt thereof



(II)

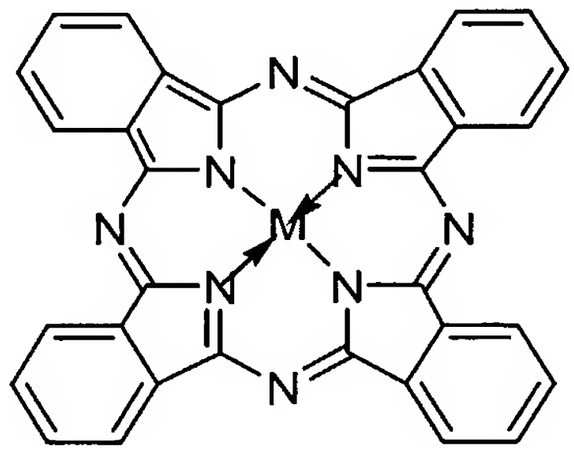
wherein M is a diamagnetic metal ion optionally complexed with or covalently bound to one or two axial ligands, wherein the metal ion is coordinated to the phthalocyanine moiety; and

$R^1 - R^{16}$ are each independently selected from hydrogen, halogen, nitro, cyano, hydroxy, thiol, amino, carboxy, aryl, heteroaryl, carbocyclyl, heterocyclyl, C_{1-20}alkyl, C_{1-20}alkenyl, C_{1-20}alkynyl, C_{1-20}alkoxy, C_{1-20}acyl, C_{1-20}alkylcarbonyloxy, C_{1-20}aralkyl, C_{1-20}hetaralkyl, C_{1-20}carbocyclylalkyl, C_{1-20}heterocyclylalkyl, C_{1-20}aminoalkyl, C_{1-20}alkylamino, C_{1-20}thioalkyl, C_{1-20}alkylthio, C_{1-20}hydroxyalkyl, C_{1-20}alkyloxycarbonyl, C_{1-20}alkylaminocarbonyl, C_{1-20}alkylcarbonylamino, C_{1-10}alkyl-Z-C_{1-10}alkyl;

R^{17} is selected from hydrogen, C_{1-20}acyl, C_{1-20}alkyl, and C_{1-20}aralkyl; and

Z is selected from S, NR^{17}, and O.

27. A pharmaceutically acceptable salt of a compound having a structure of Formula (III) or a pharmaceutically acceptable salt thereof



(III)

wherein M is $(G)_aY[(OSi(CH_3)_2(CH_2)_bN_c(R')_d(R'')_e)_fX_g]_p$;

Y is selected from Si, Al, Ga, Ge, or Sn;

R' is selected from H, CH_3, C_2H_5, C_4H_9, C_4H_8NH, C_4H_8N, $C_4H_8NCH_3$, C_4H_8S, C_4H_8O, C_4H_8Se, $OC(O)CH_3$, $OC(O)$, CS, CO, CSe, OH, $C_4H_8N(CH_2)_3CH_3$, $(CH_2)_2N(CH_3)_2$, $(CH_2)_nN((CH_2)_o(CH_3))_2$, and an alkyl group having from 1 to 12 carbon atoms;;

R" is selected from H, SO_2CH_3, $(CH_2)_2N(CH_3)_2$, $(CH_2)_{11}CH_3$, $C(S)NHC_6H_{11}O_5$, $(CH_2)_nN((CH_2)_o(CH_3))_2$, and an alkyl group having from 1 to 12 carbon atoms;

G is selected from OH and CH_3;

X is selected from I, F, Cl, or Br;

a is 0 or 1;

b is an integer from 2 to 12;

c is 0 or 1;

d is an integer from 0 to 3;

e is an integer from 0 to 2;

f is 1 or 2;

g is 0 or 1;

n is an integer from 1 to 12;

o is an integer from 1 to 11; and

p is 1 or 2.

28. A pharmaceutically acceptable salt of claim 17, wherein M is selected from $AlOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $AlOSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-$; $CH_3SiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_3)_3^+I^-]_2$; $Si[OSi(CH_3)_2(CH_2)_4NH_2]_2$; $Si[OSi(CH_3)_2(CH_2)_4NHSO_2CH_3]_2$; $HOSiOSi(CH_3)_2(CH_2)_4NHSO_2CH_3$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_2CH_3)(CH_2)_2N(CH_3)_2$; $Si[OSi(CH_3)_2(CH_2)_4NHCSNHC_6H_{11}O_5]_2$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3OCOCH_3$; $HOSiOSi(CH_3)_2(CH_2)_3OH$; $Si[OSi(CH_3)_2(CH_2)_3N(CH_2CH_3)(CH_2)_2N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8O$; $AlOSi(CH_3)_2(CH_2)_3N^+(CH_3)_2(CH_2)_{11}CH_3I^-$; $HOSiOSi(CH_3)_2(CH_2)_8N(CH_3)_2$; $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8O]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8S$; $HOSiOSi(CH_3)_2(CH_2)_3N(CH_2)_3(CH_3)_2$; $HOSiOSi(CH_3)_2(CH_2)_3NCS$; $HOSiOSi(CH_3)_2(CH_2)_3N[(CH_2)_3N(CH_3)_2]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8NCH_3$; $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8NCH_3]_2$; $HOSiOSi(CH_3)_2(CH_2)_3NC_4H_8N(CH_2)_3CH_3$; and $Si[OSi(CH_3)_2(CH_2)_3NC_4H_8NH]_2$.

29. A pharmaceutically acceptable salt of claim 18, wherein M is $HOSiOSi(CH_3)_2(CH_2)_3N(CH_3)_2$.

30. A pharmaceutically acceptable salt of claim 14, wherein the phthalocyanine has a structure of Formula (IV) or a pharmaceutically acceptable salt thereof

$$SiPc[(OR^1)(OR^2)] \quad (IV)$$

wherein R^1 is selected from H and R^2;

each R^2 is independently $Si(R^3)_2(C_{1\text{-}12}alkyl\text{-}N(C_{1\text{-}12}alkyl)_2)$;

each R^3 is independently selected from C_{1-12}alkyl, C_{1-12}alkoxy, C_{1-12}aralkyl, aryloxy, and aryl.

31. A salt of any one of claims 25-30, wherein the salt is the hydrochloric salt.

32. A salt of any one of claims 25-30, wherein the salt is the pyruvate salt.

33. A pharmaceutical composition comprising a salt any one of claims 25-30 and a pharmaceutically acceptable carrier.